

## POOR PICTURE ON C7 FREEZE FRAME

I own a Sony C7 machine which, as stated in reviews, gives excellent pictures both from off-air recordings and from pre-recorded films.

I am somewhat disappointed with the poor picture quality on Freeze Frame. I realise that no Freeze Frame is perfect, and accept the noise bar located at the bottom of the picture. The main problem is picture vibration, which can at times make the picture unwatchable.

If the one-frame advance is pressed, the noise bar moves twice down the screen — and it appears that the still frame produced, in between the noise bar moving twice, is of a far superior quality. Is this normal with the C7? Or is the machine stopping in the wrong position? I would add that occasionally I get a good still frame. The tracking control makes no difference.

I use Sony tapes, and experience "drop-outs" (white flashes) — but normally only the first time the tape is used. I find that if I first wind and rewind a new tape before recording, the "drop-outs" become minimal. Any comments?

I have recently been reading an American video magazine and note several references to Beta 1 and Beta 11 in the tape ads. This concerns me somewhat. Is the Sony C7 Beta 1 or Beta 11? Are they compatible? Is another Beta format likely to be introduced, and would different tapes be used? — R.J. Broad, Solihull, West Midlands.

The number of times that this sort of comment is made regarding video recorders with track facilities... an explanation is required.

When the tape is in motion, the video tracks are laid down at a particular angle across the tape.

Part of this is due to the angle, physically, of the tape path. A small part is due to the motion of the tape. Hence, when the track is laid into position, it is slightly different when moving from that when stationary. When we play back a tape and stop it, there will be a portion of the track

that the video head cannot "see". This causes the track error bar which appears.

Because a complete TV picture, every 1/25 of a second, is made up of two interleaving pictures or fields (and each video track consists of one of these fields), two adjacent tracks are required to reproduce a proper picture.

Obviously, when the machine is stationary, only one track is reproduced. This is why you get a degraded picture.

Another problem now occurs. With the Long Play techniques in use, one video head cannot "see" the tracks that the other video head has recorded (all domestic recorders use a dual head system). This is to stop interference between the separate pictures, as they are laid on the tape with no space between them.

The manufacturers make one of the video heads of the recorder about twice the track-width of the other, so that when the tape is stopped, further heads can retrieve information from adjacent tracks on the tape. This produces an improved still picture.

Toshiba has tried to improve on this by adding two more video heads, which help to fill in the information lost when the tape is stopped. Further than that, the reproduced picture is made up of substantially the correct two fields of information.

When frame advancing on the Sony, it goes through two fields — from one picture to the next complete one. Due to the motion of the tape and the interleaving of the fields, a good resolution picture momentarily appears. So it all depends how accurately the tape stops, and the actual physical position of the tape when it does, as to the picture you obtain. The tracking control only operates on normal playback. All other tracking is pre-set.

Like any mechanical device, a machine needs a period to "run in" — so do tapes. Minute quantities of loose oxide can be on the surface of the tape and produce the symptoms you describe. Also, "virgin tape" tends to have no particular magnetic bias.

## EASIEST WAY TO GET UK TELLY IN TEHERAN

I HAVE a daughter living in Teheran and her social activities are restricted.

I would like to purchase a video system for her and then be able to send her cassettes, as it would be a tremendous boost for her in the present difficult circumstances.

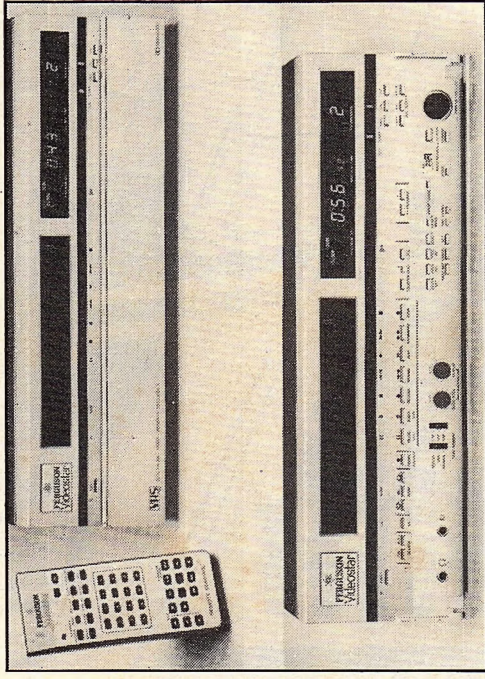
I do not know which system I could purchase that would be suitable in Teheran. Could you help, please? — I.R. Taylor, Stockton-On-Tees, Cleveland.

This is not as simple as it seems, as the TV system used in Iran is Secam. Hence tapes recorded in this country would not be viewable on TV's there.

The best way round this would be for her to have a UK TV and recorder linked together. In this way, the equipment would be usable upon return to this country. Using multi-standard equipment can be very complicated and expensive. The VHS system would seem to be the most popular choice.

# What's Doc?

WHAT VIDEO'S resident engineer CHRIS EVANS will answer your machine and tape problems. You must include the current Problem Solver Voucher and we regret we cannot answer queries over the phone. Write to: WHAT VIDEO Doctor, 30 Wellington Street, London WC2 7BD.



White dots on screen with new aerial for Ferguson 3V23.

## HIGH GAIN AERIAL PICKS UP TOO MANY SIGNALS

FIRST OF ALL I want to congratulate the entire team of WHAT VIDEO for bringing out such an interesting magazine every month, which I have enjoyed reading since it first came out.

I have a Ferguson 3V23. When I bought it, and using the existing roof aerial, I was getting sound-on-vision only on BBC1 and BBC2, when using the video for recording and playback. Consequently, I decided to install an XG high gain aerial, which eliminated this problem and improved the quality of the picture.

Now — when the video is on — white dots go across the screen frequently, and when playing back a recording the dots still appear as well as sideways shifting action.

Needless to say, these troubles

only occur when the video is on. Could you please advise on what measures I have to take now? — A.L. Matos, London W12.

The interference that you are now experiencing is more than likely caused by your aerial picking up radar signals from an airport or similar establishment in the area. Now you have a high gain aerial system, it can "see" a lot further than before.

You will also notice that there is a regular repetition of this interference. My only advice is to try and rotate the aerial system in such a way as to minimise the interference, but keep good signal strength on the programmes that you actually want to receive.

# Sanyo 5400 is a lovely looker

the usual noise bars accompanying the Search function have been reduced to three, thin, quite unobtrusive lines.

Setting the tuner is achieved by lifting a large flap on the top right of the recorder. There's a rear-mounted switch for clicking-on a black and white test pattern signal. Twiddle the thumbwheels to your chosen stations, and you're in business. There's an automatic frequency control knob beside the thumbwheels. Switch this to Off while you're twiddling, then back On again when your programmes are properly tuned-in.

The timer controls are located, quite logically, beneath the clock display. Press the timer button, and after setting the Start and Finish time the recorder switches on and off automatically and quite independently of anything else you may press in the meantime.

On-board electronics take over, and there's nothing more for you to do. All of the controls are LED illuminated and the overall impression

Colours, particularly red, were oversaturated, and in fact the picture appeared to be so "soft" as to be almost out of focus.

The world snooker championships were being televised during my time with the 5400 and it was very noticeable that the snooker balls had double outlines.

A check with the recorder disconnected showed that normal television aerial receiving was perfectly OK and I plugged-in both a Ferguson 3V30 (VHS) and a Sony C5 (Beta) which recorded perfectly — confirming that there appeared to be some minor adjustment fault on the Sanyo.

This is a point to watch out for, because the WHAT VIDEO Home Test on the 5300 found identical faults with the on-screen quality of the machine as well.

This aside, an impressive aspect of the machine's performance was the clean-cut Edit when using Pause control. Very handy if you use the 5400 as your final assembly machine, while recording on to it from a portable.

For those looking for a well-designed and attractively-priced Beta format home machine, then the 5400 is certainly worth further investigation.

But do carefully check that picture quality — JOHN KAYWOOD

### MANUFACTURER'S SPECIFICATIONS

Recording system: rotary two-head helical scan  
Tape speed: 18.73 mm/sec  
Recording time: 3 hours 15 mins with L250 cassette  
Tuner: 8-channel varactor  
RF input: channel 21-69  
Converter: built-in UHF converter 30-39 (pre-set to 36)  
Timer: 1 week, 1 programme  
Audio input level: -10 dB, MIC -60 dB  
Video signal to noise ratio: more than 42 dB  
Audio S/N: More than 40 dB  
Horizontal resolution: colour 270 lines, B/W 300 lines  
Audio band width: 50 Hz-10kHz  
Wow and flutter: less than 0.3% (DIN)  
Dimensions: 480 (w) x 135 (h) x 350 (d) mm



*What*  
VIDEO

# What, Why & How

*What*  
VIDEO

# What, Why & How

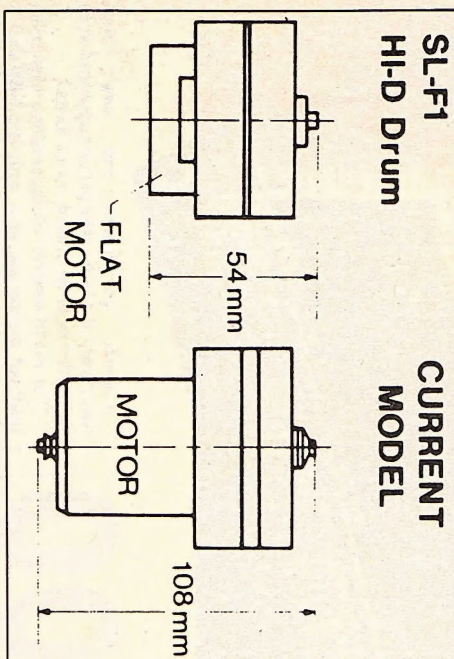
Illustrations courtesy of Panasonic,  
Philips, JVC and Sony.

## INSIDE VIDEO IN WORDS AND PICTURES

**THIS NEW WHAT VIDEO feature is an at-a-glance look at video technology. How does it work? What's inside? How does one video recorder control relate to another? These are some of the questions we'll be answering month by month in words and pictures . . . and if there are any points you'd like to see illustrated and explained then write to "What, Why and How," WHAT VIDEO, 30 Wellington Street, London WC2.**

## HOW THEY SQUEEZED THE SIZE OF SONY'S NEW F1

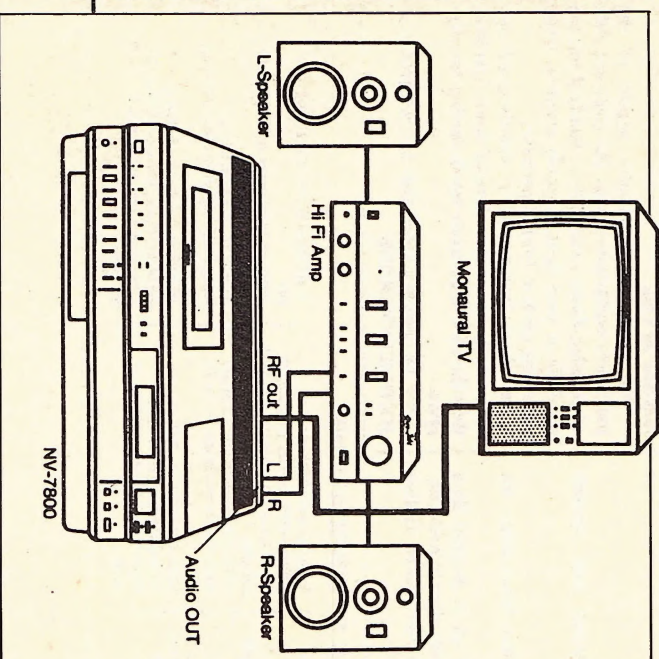
THESE ILLUSTRATIONS (below) from Sony indicate the rapid advance in video recorder technology that brought about the remarkable reduction in size of Sony's new F1 portable component system — as against the now-dated Beta format 3000UB portable from the same company. Sony engineers developed a new thin recording head drum for the F1, plus a new flat motor. The drum width now measures no more than two inches.



## HOW TO USE A STEREO VIDEO WITH AN ORDINARY TV

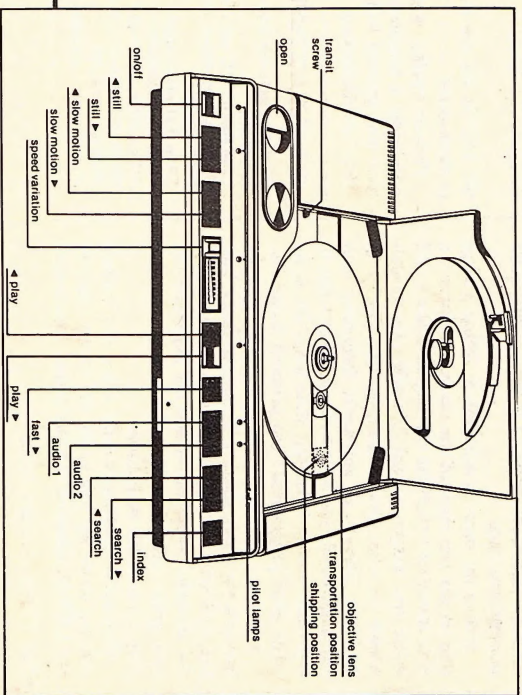
THIS DIAGRAM (below) of the new Panasonic NV-7800 stereo recorder shows how to connect it up with a hi-fi amplifier and an ordinary (ie, mono) TV set to play back tapes recorded using both channels or pre-recorded stereo cassettes.

To record a simulcast of TV programme and stereo radio programme, you will need a special lead to connect your radio tuner to the video which Panasonic is in the process of producing.



## A LOOK AT LASERVISION

THE OPERATING functions of the Philips LaserVision disc player. The player will not re-record but does offer better picture quality than tape, stereo sound, and interesting "inter-active" possibilities. There are two types of LaserVision disc: Long Play for movies and Active Play offering the full range of trick facilities.



## Inside a VHS video cassette and (below and right) how the tape functions inside your machine

A VIDEO CASSETTE is more than just a box: inside that perhaps-ugly housing lurks a sophisticated mechanical device, ready to be triggered by the function buttons of your video recorder. This diagram (above) shows how the two reels sit side by side. On the right is a remarkable National Panasonic picture illustrating the path of a tape around the head of the video recorder. This is also shown in the drawing, bottom. Below is a thickness of a tape exploded to show its "ingredients".

